

R E M A R K S

Reconsideration of this application, as amended, is respectfully requested.

THE SPECIFICATION

The abstract has been amended to better comply with the requirements of MPEP 608.01(b) as required by the Examiner.

No new matter has been added, and it is respectfully requested that the amendments to the abstract be approved and entered, and that the objection to the specification be withdrawn.

THE DRAWINGS

Figs. 1A, 1B and 2 have been amended to be labeled as "Prior Art" as requested by the Examiner.

In addition, Fig. 3 has been amended to show connection point "P" mentioned in the specification at, for example, page 8, line 8.

Submitted herewith are corrected sheets of formal drawing which incorporate the amendments and annotated sheets showing the changes made thereto.

No new matter has been added, and it is respectfully requested that the Examiner's objection to the drawings be withdrawn.

THE CLAIMS

Claim 1 has been amended to clarify that the magnetic detecting medium has a magnetic substance printed thereon, and that the detection circuit detects a concentration of the magnetic substance printed on the magnetic detecting medium based on the detected potential change.

Similarly, claim 2 has also been amended to clarify that the magnetic detecting medium has a magnetic substance printed thereon. In addition, claim 2 has been amended to clarify the structural relationships between the first and second fixed resistors, the DC power source, and the first and second magnetic detecting elements, as well as to clarify that the detection circuit comprises a single differential amplifier and detects a concentration of the magnetic substance printed on the magnetic detecting medium based on the detected potential change.

Still further, claims 1 and 2 have been amended to make some minor grammatical improvements so as to put them in better form for issuance in a U.S. patent.

No new matter has been added, and it is respectfully requested that the amendments to the claims be approved and entered.

THE PRIOR ART REJECTION

Claim 1 was rejected under 35 USC 102 as being anticipated by JP 2001/014029, and claim 2 was rejected under 35 USC 102 as being anticipated by USP 5,545,983 ("Okeya et al"). These rejections, however, are respectfully traversed with respect to the claims as amended hereinabove.

According to the present invention as recited in amended claim 1, a magnetic sensor is provided which comprises a pair of magnetic detecting elements connected in series with each other, wherein one of the pair of magnetic detecting elements serves as a sensing portion adapted to face a magnetic detecting medium having a magnetic substance printed thereon, and the other of the pair of magnetic detecting elements serves as a temperature-compensating portion that is not affected by the magnetic substance printed on the magnetic detecting medium. As recited in amended claim 1, a magnet gives magnetic biases to the pair of magnetic detecting elements, and a detection circuit applies DC voltage to between both ends of the pair of serially-connected magnetic detecting elements and detects a potential change of a common connection point of the magnetic detecting elements. In addition, as recited in amended claim 1, the detection circuit detects a concentration of the magnetic substance printed on the magnetic detecting medium based on the detected potential change.

By contrast, JP 2001/014029 merely discloses a magnetic sensor that detects a magnet embedded along a guidance path along which a golf cart having the magnetic sensor moves. And it is respectfully submitted that JP 2001/014029 does not at all disclose, teach or suggest a technique for detecting a concentration of a magnetic substance printed on a magnetic detecting medium in the manner of the present invention as recited in amended claim 1. In particular, it is respectfully submitted that JP 2001/014029 does not disclose, teach or suggest a detection circuit which detects a concentration of a magnetic substance printed on a magnetic detecting medium based on a detected potential change of a common connection point of a pair of serially connected magnetic detecting elements, as according to the present invention as recited in amended claim 1.

According to the present invention as recited in amended claim 2, moreover, a magnetic sensor is provided which comprises first and second fixed resistors each of which has a first end connected with a first side of an output line of a DC power source, a first magnetic detecting element which has a first end connected with a second side of the output line of the DC power source and a second end connected with a second end of the first fixed resistor to function as a sensing portion adapted to face a magnetic detecting medium having a magnetic substance printed thereon, and a second magnetic detecting element which has a

first end connected with the second side of the output line of the DC power source and a second end connected with a second end of the second fixed resistor to function as a temperature-compensating portion that is not affected by the magnetic substance printed on the magnetic detecting medium. As recited in amended claim 2, a magnet gives magnetic biases to the first and second magnetic detecting elements, and a detection circuit detects a potential change between a connection point of the first fixed resistor and the first magnetic detecting element and a connection point of the second fixed resistor and the second magnetic detecting element. In addition, as recited in amended claim 2, the detection circuit comprises a single differential amplifier, and detects a concentration of the magnetic substance printed on the magnetic detecting medium based on the detected potential change.

By contrast, Okeya et al merely discloses a magnetic sensor that detects a displacement of a steel wire based on a variation in magnetism sensed by means of two differential amplifiers. And it is respectfully submitted that Okeya et al does not at all disclose, teach or suggest a technique for detecting a concentration of a magnetic substance printed on a magnetic detecting medium in the manner of the present invention as recited in amended claim 2. In particular, it is respectfully submitted that Okeya et al does not disclose, teach or suggest a

detection circuit which detects a concentration of a magnetic substance printed on a magnetic detecting medium based on a potential change between the connection point of a first fixed resistor and a first magnetic detecting element and a connection point of a second fixed resistor and a second magnetic detecting element by means of a single differential amplifier, as according to the present invention as recited in amended claim 2.

Accordingly, it is respectfully submitted that the present invention as recited in each of amended claims 1 and 2 clearly patentably distinguishes over JP 2001/014029 and Okeya et al under 35 USC 102 as well as under 35 USC 103.

* * * * *

Entry of this Amendment, allowance of the claims and the passing of this application to issue are respectfully solicited.

If the Examiner has any comments, questions, objections or recommendations, the Examiner is invited to telephone the undersigned for prompt action.

Respectfully submitted,

/Douglas Holtz/

Douglas Holtz
Reg. No. 33,902

Frishauf, Holtz, Goodman & Chick, P.C.
220 Fifth Avenue - 16th Floor
New York, New York 10001-7708
Tel. No. (212) 319-4900

DH:rjl
encs.

FIG. 1A *PRIOR ART*

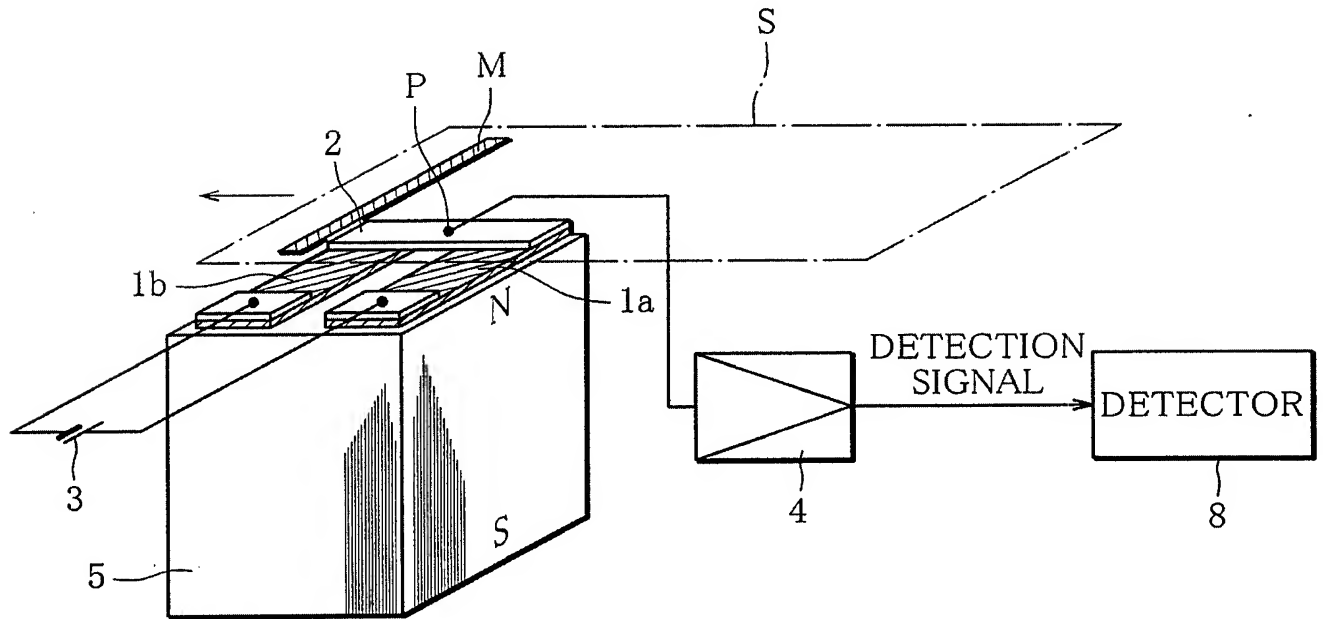


FIG. 1B *PRIOR ART*

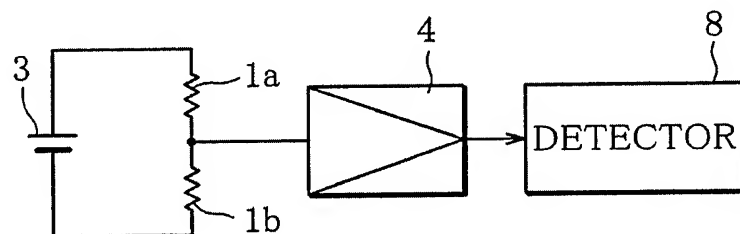


FIG. 2
PRIOR ART

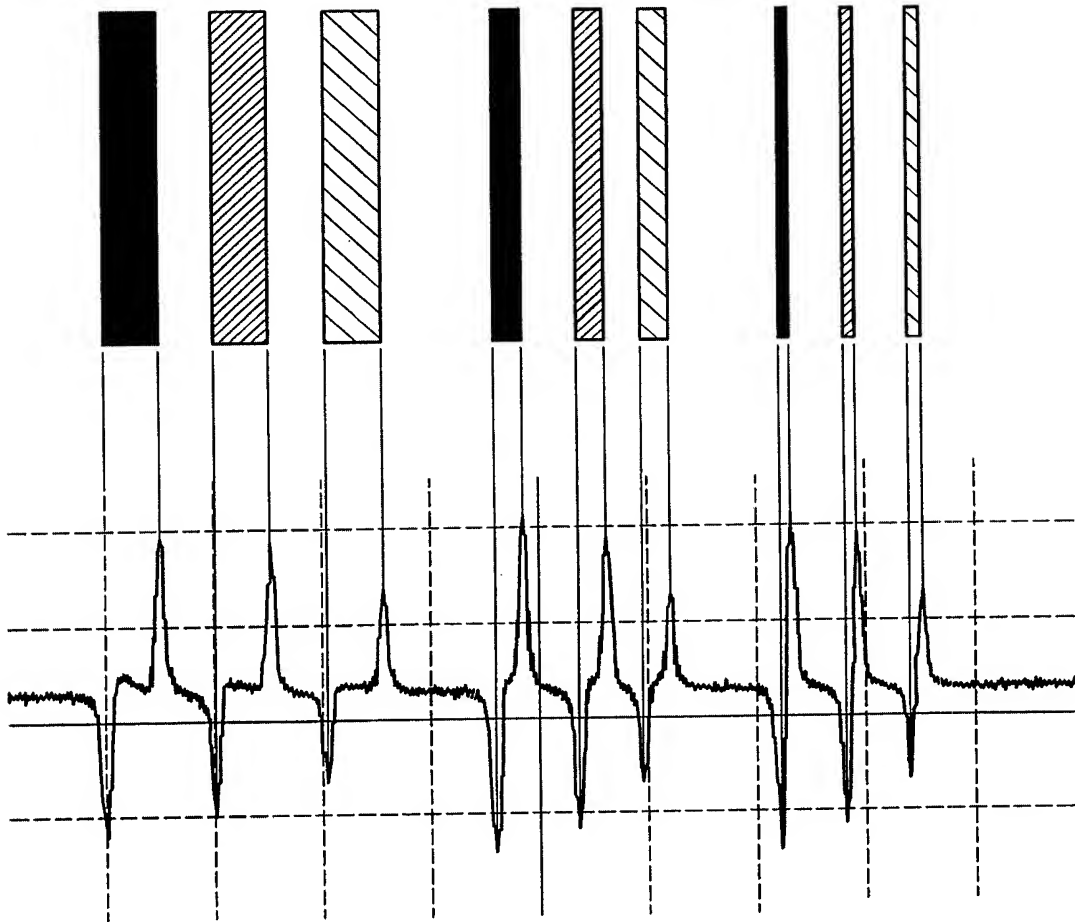


FIG. 3

